The Coupler Conundrum – A Baseline Pilot Study: Decision Making and Ambiguity in Primary Care

Julie McGowan, Ph.D., Pat Winstead-Fry, Ph.D., Sally Parrish, R.N.
Lee Weisman, M.D., Richard Bernstein, M.D., M. Douglas, FNP, R.N.
Vermont Initiative for Rural Health Informatics and Telemedicine
University of Vermont, Burlington, Vermont

Background. Primary care practice is being championed as the cornerstone of health care delivery for the next century. However, primary care practitioners, more than any other single group of health care professionals, are becoming victims of the health information explosion. They are the first to be presented with the medical problems of their patients; they must make diagnoses or order appropriate tests; they must determine the appropriate management options, all within the context of the ever changing medical knowledge base and the breath of medical care decision making required of primary care providers.

Problem Knowledge Couplers are clinical decision support tools which combine the unique history, physical and laboratory findings of the individual patient with an extensive knowledge net to offer patient-specific diagnostic and management options. These tools, because of their reliance on quality filtered health sciences information gleaned from the world's published medical knowledge base, could offer a means to mitigate the feelings of ambiguity caused by the confluence of the medical information explosion and the presentation of less common complaints in a primary care setting. To test this hypothesis, a pilot study, as part of a multi-component research project on the use of clinical decision support tools to lessen ambiguity in primary care, was designed to determine whether Problem Knowledge Couplers were reliable tools for common primary care diagnostic problems and could affect primary care decision-making.

Methods. A rural primary care office consisting of two family practitioners and one nurse practitioner served as the site of the pilot study. Patients scheduled for routine offices visits during a one week period provided a random sample. Prior to being seen by their primary care provider, they were asked if they would like to participate in the study and were given the appropriate consent forms.

The patient participant was seen initially by the primary care provider who completed a standard workup based on the chief medical complaint. The patient was then seen by a registered nurse researcher trained in coupler use. The researcher entered data into the relevant Problem Knowledge Coupler based on an interview with the patient and information contained in the patient's medical record.

Following the patient interview and the subsequent coupling process, the primary care providers and nurse researchers met to discuss each case and compare provider identified findings and suggested management options with those of the couplers.

Results. Because of unanticipated weather conditions, only six patients provided data for the pilot study. All were female, Caucasian, and five out of six presented with URI (Upper Respiratory Infection) as a chief complaint. The sixth patient presented with burning upon urination. The two couplers used were the URI Complaints Coupler and the Dysuria in Women Coupler.

The poster and paper present each case in detail. In the aggregate, the coupler process asked more questions and enabled the researchers to have more data. This lead to a presumptive diagnosis for each case through analysis of both the knowledge-based information and the unique patient attributes. The coupler diagnoses agreed with those of the primary care providers.

Conclusion. The coupler process collected much more data than the normal patient interview and physical exam. Several potential conditions not related to the chief medical complaint were identified. However, it is recognized that additional time required to administer couplers is problematic without changing normal office patterns.

Both the couplers and the primary care providers arrived at the same diagnostic and management options for the common presenting problems, thus validating coupler use as a basis for a larger study to ascertain their efficacy in situations of ambiguity.

1091—8280/97/$5.00